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ABSTRACT

This study examined the relationships among a set of psychosocial variables (academic competence, physical appearance, self-worth, and motivation) and between the psychosocial variables and academic achievement for 236 third grade and fifth grade native Spanish speakers and native English speakers enrolled in a bilingual immersion program since kindergarten. Analyses of students' responses to several measures showed significant main effects for grade on every psychosocial variable, with third graders scoring higher than fifth graders and significant grade level effects in Spanish mathematics and English reading and mathematics, with fifth graders outperforming third graders. English speakers scored higher than Spanish speakers in academic competence, English reading and mathematics, and Spanish mathematics; Spanish speakers outperformed English speakers in Spanish reading. The best predictors of current English reading and mathematics achievement were the Spanish and English mathematics scores from two years previous. Results are compared with previous research and discussed in terms of their theoretical significance. (Contains 21 references.) (JL)

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Relationships among Psychosocial Factors and Academic Achievement in Bilingual Hispanic and Anglo Students

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ABSTRACT

The purpose of this study was to examine the relationships among a set of psychosocial variables (academic competence, physical appearance, self worth, motivation) and between the psychosocial variables and academic achievement for third- and fifth-grade native Spanish speakers and native English speakers enrolled in a bilingual immersion program. A total of 236 third-grade and fifth-grade students participated in the study; they had been enrolled in a bilingual immersion program since kindergarten or first grade at one of three schools in California. Results showed that: 1) there were significant main effects for grade on every psychosocial variable, with third graders scoring higher than fifth graders, and significant grade level effects in Spanish mathematics and English reading and mathematics, with fifth graders outperforming third graders; 2) English speakers received higher scores than Spanish speakers in academic competence, English reading and mathematics, and Spanish mathematics; Spanish speakers outperformed English speakers in Spanish reading; and there was no language background main effect in self worth, physical appearance, or motivation; 3) academic competence was not related to 7 of 8 academic achievement scores in either third or fifth grade, but motivation in fifth grade was highly correlated with academic achievement; 4) the best predictors of current English reading and mathematics achievement were the Spanish and English mathematics scores from two years previous. Psychosocial variables were not significant predictors of either English reading or mathematics. Results are compared and contrasted with previous research and discussed in terms of their theoretical significance.

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Relationships among Psychosocial Factors and Academic Achievement in Bilingual Hispanic and Anglo Students

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In the past few years, we have seen renewed interest by educators in the psychosocial competence of children. While cultural and linguistic diversity within United States classrooms is becoming the norm, empirically-based research has not adequately addressed the issue of how to promote psychosocial competence in addition to academic achievement for all students within the context of classrooms that are both culturally and linguistically diverse.

The purpose of this study was to examine the relationships among a set of psychosocial variables (academic and social competence, physical appearance, self worth, motivation, and cross-cultural attitudes) and between the psychosocial variables and academic achievement for third- and fifth-grade native English-speaking and native Spanish-speaking students enrolled in a bilingual immersion program.

Theoretical Perspective

Language education theorists and practitioners have discussed the social context of language learning in terms of the additive/subtractive bilingualism dichotomy. Additive bilingualism is a form of enrichment in which children can add one or more foreign languages to their existing language experiences. Additive bilingualism is associated with high levels of proficiency in the two languages, enhanced self worth, and positive cross-cultural attitudes (Lambert, 1984, 1987).

Psychosocial competence takes on increased significance in this context. Considerable early literature suggested that ethnic minority children showed lower levels of self worth than Anglo children (see Rosenberg, 1979; Spencer & Markstrom-Adams, 1990; Wylie, 1979), a finding contested on several methodological and conceptual grounds (Spencer & Markstrom-Adams, 1990; Wylie, 1979). Some researchers have suggested that bilingual education programs promote children's self worth (Hernandez-Chavez, 1984; Lindholm, in press). According to the rationale for this proposition, self worth is enhanced because the children feel that their language and culture are an

important part of the classroom; this rationale would suggest that self worth would be facilitated. At the same time, evaluations of high quality bilingual education programs also show that such programs promote academic achievement in the participants when the programs are additive bilingual programs (Lindholm, 1990a, 1991, 1992; Willig, 1985).

Bilingual immersion education was developed to provide students with the most positive social context in which to develop high levels of bilingual and psychosocial competence; in which both linguistic minority and majority students could benefit from an additive bilingualism environment; in which students develop in a social context in which both languages and cultures are equally valued and all students are treated equally; and in which students are integrated in a natural fashion to promote positive cross-cultural attitudes and psychosocial development, and higher levels of second language development and academic achievement (Lindholm, 1991, 1992, in press). In this educational environment, we might expect that there would be little or no ethnic variation among students in psychosocial development and achievement.

Researchers have demonstrated that there is a clear link between psychosocial factors and academic achievement (e.g., Harter, 1983; Stevenson, Chen & Uttal, 1990; Wylie, 1979). Harter and Connell (1982) have shown that achievement is causally prior to perceived scholastic competence and that perceived competence, in turn, predicts one's motivational orientation, which can then influence academic achievement. Thus, there are complex interactions among psychosocial factors and academic achievement, but they have not been studied extensively, nor have these relationships received much investigative attention in linguistically and culturally diverse populations.

Research Questions

This study will examine the relationships among various psychosocial factors and academic achievement in 200 third- and fifth-grade native English and Spanish speakers at three school sites following the same bilingual immersion programs. The major research questions are: 1) Do Spanish and English speakers differ in their ratings of their academic competence, physical appearance, self worth, and motivation? 2) What are the relationships among academic competence, physical appearance, self worth, motivation, and academic achievement? 3) What combination of psychosocial variables and academic achievement two years previous are the best predictors of academic achievement at third or fifth grade?

Methods

A total of 236 third-grade and fifth-grade students participated in the study; they had been enrolled in a bilingual immersion program since kindergarten or first grade at one of three schools in California. Approximately equal numbers of boys and girls were represented among the native Spanish speaking (76 third graders and 71 fifth graders) and native English speaking students (59 third graders and 30 fifth graders). All of the Spanish speakers were Hispanic while most (95%) of the English speakers were Anglo.

Social class information was not available for the students, so a gross measure was used which was the students' participation or nonparticipation in the free/reduced price lunch program. This gross measure does not provide accurate social class, but rather separates the poverty-level students from students above the poverty level, which is a far cry from middle class for many of the students. About 59% of the students were receiving free or reduced price lunch while the remaining 41% were not eligible to participate in the free/reduced price lunch program. There was no significant association between free/reduced lunch participation and language background (61% of Spanish speakers and 39% of English speakers participated, X_2 [1] = 0.38, N.S.).

Students completed the Self-Perception Profile for Children (Harter, 1983) which measures the child's sense of academic and social competence, physical appearance, and self worth. Each area is composed of a separate subscale of six items. In Harter's scale, for each of the items, the student selects from among two dichotomous alternatives which better describes the student. For that alternative, the student decides whether that descriptor is "Not very true" or "Really true." This format provides a range from 1 to 4; one indicates low competence and four indicates high competence. An adapted version of this scale was used in the present study because in previous years several schools had complained that students had difficulty understanding the dichotomous choice situation. Thus, students were given one descriptive statement from Harter's dichotomy and asked to indicate their agreement, from 1 "do not agree", to 2 "sort of agree", 3 "agree". Students completed the ratings in three domains, academic competence, appearance, and global self worth. Students' scores could range from 6 to 18 as there were six items per subscale.

Students also completed a subscale [Challenge] of Harter's (1981) motivation scale. The original format of the scale was similar to the Self-Perception Profile for Children, but the scale was adapted in the same way as

the Self-Perception Profile for Children, with students responding to one descriptor using a three-point scale of agreement. In the adaptation, some of the original items which required students to select one side of a dichotomous statement were restated so that students responded to both sides of the dichotomy. Thus, there were 10 items in this adapted scale, for a range in scores from 10 to 30.

Both these instruments were completed by the students in their language of preference (i.e., Spanish or English).

In addition, all students' academic achievement scores in reading and mathematics in both English and Spanish were available for third and fifth graders for 1991 and for 1989. The Comprehensive Tests of Basic Skills, a norm-referenced test, was designed to measure achievement in English in the basic skills normally found in U.S. state and district curricula. La Prueba Riverside de Realización en Español (La Prueba), also a norm-referenced achievement test, was designed to assess students' progress in the basic skills of reading, language, mathematics, social studies and science in Spanish.

Results

The first set of analyses examined the mean scores from the psychosocial variables (academic competence, appearance, self worth, motivation). Table 1 presents the mean scores for the psychosocial variables and the academic achievement variables along with the analysis of variance results.

Attention to Table 1 shows that there was a significant main effect for grade level for all the psychosocial variables. For each variable, the younger (third grade) students generally reported higher total scores on the psychosocial variables than the older (fifth grade) students across both language groups.

In analyzing the psychosocial variables for language background differences, Spanish speakers did not score significantly different from English speakers in self worth, physical appearance, or motivation. However, Spanish speakers scored lower than English speakers on academic competence.

Insert Table 1 about here

Next we looked at the academic achievement of the students. Since students were instructed for significant portions of their day in both English and Spanish (80% Spanish instruction in 3rd grade, 50% Spanish instruction in 5th grade), reading and mathematics scores are presented in

both languages. Attention to Table 1 shows that there were significant main effects for Grade and/or Language Background for Spanish Reading, English Reading, English Mathematics, and Spanish Mathematics. In the English achievement tests and in Spanish Mathematics, the English speakers scored significantly higher than the Spanish speakers and the fifth graders significantly outperformed the third graders. With respect to reading achievement in Spanish, the Spanish speakers scored significantly higher than the English speakers, but there was no grade effect.

None of the Language Background by Grade interactions were significant. In addition, analyses of variance including social class defined by free or reduced lunch participation vs nonparticipation for the free/reduced lunch program showed that this measure of social class was not a significant main effect for any of the psychosocial or achievement variables.

Next we look at the relationships among the psychosocial variables and academic achievement. The top portion of Table 2 presents the correlation coefficients for the relationships between the psychosocial variables for third and fifth graders. As Table 2 shows, there were highly significant positive correlations among the psychosocial variables for both third and fifth graders. Academic competence showed a positive and significant association with self worth (r = .57 for 3rd graders, r = .71 for 5th graders; $p < .001$), physical appearance (r = .50 for 3rd graders, r = .49 for 5th graders; $p < .001$), and motivation for third grade only (r = .21; $p < .01$). Self worth was also positively related to physical appearance (r = .75 for 3rd graders, r = .53 for 5th graders; $p < .001$) and motivation for third grade only (r = .15; $p < .01$). Finally, physical appearance was significantly related to motivation, though the correlation was smaller at third grade (r = .15; $p < .05$) than at fifth grade (r = .31; $p < .01$). These patterns of correlations were similar for Spanish and English speakers.

Insert Table 2 about here

The bottom portion of Table 2 shows the correlations between the psychosocial and achievement variables. Self worth was not significantly correlated with any achievement variable at either third or fifth grade. Academic competence was only related to mathematics achievement at each of the third and fifth grades. For third graders, their current academic competence score was highly related to their English mathematics score as a first grader in 1989 (r = .33; $p < .01$). Among fifth graders, academic

competence was correlated with their current mathematics score in Spanish (r = .23; $p < .05$).

Table 3 presents the results of the last set of analyses which examined the predictors of English Mathematics and English Reading achievement. As Table 3 shows, the significant predictors of English Mathematics achievement were the English Mathematics score in 1989 (2 years previous) (R^2 = .17), grade level (R^2 change = .22), and the Spanish Mathematics score in 1989 (2 years previous) (R^2 change = .04). Thus, mathematics understanding in both English and Spanish two years previous was crucial to predicting current mathematics achievement in English.

Insert Table 3 about here

The predictors looked quite similar when a multiple regression was conducted for English Reading achievement. That is, the significant predictors of English Reading achievement were the English Reading score in 1989 (2 years previous) (R^2 = .46), grade level (R^2 change = .02), and the Spanish Reading score in 1989 (2 years previous) (R^2 change = .03).

Thus, despite the significant correlations of motivation with the achievement measures in 1989 and 1991, neither motivation nor any other psychosocial variable was a significant predictor of reading or mathematics achievement.

Discussion

The purpose of this study was to examine the relationships among a set of psychosocial variables (academic competence, physical appearance, self worth, and motivation) and between the psychosocial variables and academic achievement for third- and fifth-grade native English speakers and native Spanish speakers enrolled in a bilingual immersion program.

The first set of results showed that there were significant grade level differences in the psychosocial variables. For every psychosocial variable, third graders scored higher than fifth graders and this was true for Spanish speakers and English speakers. These grade level effects are consistent with considerable past research showing that after the second grade self evaluations decline with increasing grade level (Harter, 1981, 1983; Stipek, 1988).

While there was a drop from third to fifth grade in the psychosocial variables, there were highly significant increases from third to fifth grade in scholastic performance, in English Reading, and English and Spanish

Mathematics achievement. By fifth grade, the students performed at or above grade level in reading in their first language (i.e., English reading for English speakers and Spanish reading for Spanish speakers) and in mathematics achievement in both languages.

With respect to language background, there were no differences between English and Spanish speakers for self worth, physical appearance, or motivation. However, in the area of academic competence, English speakers rated themselves higher than Spanish speakers rated themselves. This language background difference in academic competence parallels language background differences in English reading and mathematics and Spanish mathematics. In addition, this finding is consistent with a study by Martinez and Dukes (1987), who found that when students rated themselves on how intelligent they were, the self ratings of Hispanics were lower than those of Anglos. Similarly, Lamborn, Mounts, Steinberg and Dornbusch (1991) also found, in sample of adolescents, that Hispanics scored lower than Anglos on Harter's academic competence subscale. While the current findings on academic competence are consistent with previous research and parallel academic achievement, they are disappointing in showing that the Spanish speakers feel less capable academically than the English speakers. The reason these findings are discouraging is because these students are enrolled in an additive bilingual program that promotes psychosocial development, feelings of academic competence and mastery, and academic achievement for both groups of students. Thus, we would hope to see similarity in scores for native English and Spanish speakers to really be able to close achievement gaps between these students. Yet, even though Spanish speakers have an advantage over English speakers in the language of the classroom, English speakers typically have an advantage over the Spanish speakers in readiness skills and literacy experiences when they begin school. In addition, the English speakers always have the benefit of being native speakers of the valued societal language no matter how esteemed Spanish is in the classroom.

The relationships of academic competence with the other psychosocial variables makes this language background difference all the more important. Academic competence was highly related to self worth and physical appearance; self worth was associated with physical appearance; and physical appearance was also correlated with motivation. Though it is not surprising that self esteem was related to academic competence and physical appearance, it was surprising how highly correlated physical appearance was with all the other variables, particularly academic competence and motivation. Also, while

motivation was associated with academic competence at third grade, there was no such relationship at fifth grade. This result at the third grade was expected but not the result at fifth grade considering the work of Harter and Connell (1982) who have shown that perceived competence predicts one's motivational orientation. Of course, the psychosocial results presented here are not longitudinal which may account for this lack of consistency in findings.

The absence of relationships between achievement and academic competence is also surprising in the current findings. Neither Spanish speakers nor English speakers were very good judges of their achievement, as shown by the low correlations between achievement and academic competence ratings (r = .02 to .33). In other studies correlating academic competence to achievement or grades, moderate to high associations were obtained (Harter, 1982; Lindholm, 1990b; Stigler, Smith & Mao, 1985).

The relationship between motivation and academic achievement was also interesting. While motivation was not related to achievement at the third grade level, motivation was correlated with all of the 1989 achievement measures and with current Spanish reading and English mathematics. In considering this finding within the context of previous research, Harter and Connell (1982) have suggested that achievement is causally prior to perceived scholastic competence and that perceived competence, in turn, predicts one's motivational orientation, which can then influence academic achievement. In the current results, at fifth grade, there is clearly a relationship between motivation and achievement, but no relationship between academic competence and motivation or achievement. Yet, at third grade, there is a relationship between academic competence and motivation, but not between achievement and academic competence or motivation. These results are perplexing and suggest the need for additional research in this area.

Finally, these results suggest that psychosocial variables were not significant predictors of English reading or English mathematics achievement. The most important predictors were past performance (of two years previous) in both languages and grade level. Considerably more research needs to examine factors related to academic achievement among culturally and linguistically diverse students in language education programs in which the students are learning in not one, but two, languages.

Table 1

Mean Scores and *F* Values for
Psychosocial Variables and Academic Achievement
by Grade Level and Language Background

Variable	Spanish Speakers		English Speakers		*F value*	
	3rd	5th	3rd	5th	Grade	Lang
Psychosocial Variables						
Academic Competence	14.0 (2.6)	12.2 (2.6)	14.6 (2.6)	12.9 (3.7)	22.6 ***	5.0 *
Self Worth	14.2 (2.8)	13.0 (3.1)	14.9 (3.0)	13.1 (3.7)	10.8 ***	1.6 N.S.
Physical Appearance	13.8 (2.9)	12.8 (2.6)	14.8 (2.9)	13.1 (3.1)	9.3 **	3.0 N.S.
Motivation	22.8 (3.9)	21.5 (3.9)	24.1 (5.4)	22.5 (5.0)	4.3 *	3.0 N.S.
Academic Achievement						
Spanish Reading	52.2 (18.6)	53.0 (22.5)	44.0 (16.6)	40.8 (18.2)	0.2 N.S.	6.3 *
Spanish Mathematics	45.8 (17.8)	65.1 (26.1)	58.5 (23.9)	71.2 (18.6)	18.4 ***	6.0 *
English Reading	26.7 (16.6)	36.9 (14.6)	49.7 (18.8)	56.5 (19.2)	14.4 ***	78.0 ***
English Mathematics	34.6 (18.7)	51.9 (21.5)	55.9 (19.2)	68.6 (22.0)	30.4 ***	43.0 ***

NOTE. Standard deviations are given in parentheses. *df*'s = 1,128 (Spanish Achievement); 1,200 (Psychosocial Variables); 1,212 (English Achievement).

* $p < .05$

** $p < .01$

*** $p < .001$

Table 2

Correlations Among Psychosocial Variables and Academic Achievement
By Language Background and Grade Level

	Third Graders			Fifth Graders		
	Acad Comp	Self Worth	Mot	Acad Comp	Self Worth	Mot
Self Worth	.57***			.71***		
Motivation	.21**	.15*		.11	.05	
Physical Appearance	.50***	.75***	.15*	.49***	.53***	.31**
Spanish Read 1989	.05	-.01	.01	.05	-.12	.34**
Spanish Read 1991	-.17	-.03	-.14	.03	.05	.27*
English Read 1989	-.05	-.07	-.06	-.06	-.15	.32**
English Read 1991	.02	-.06	.18*	.01	-.13	.16
Spanish Math 1989	.17	.01	-.02	.06	.09	.42***
Spanish Math 1991	.09	.15	.04	.23*	.14	.07
English Math 1989	.33**	.13	.13	.07	-.04	.48***
English Math 1991	-.08	-.10	.02	.16	.08	.22*

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 3

Multiple Regression Analysis: Significant Predictors of
English Reading and Mathematics Achievement

Dependent Variable and Predictors	R_2	*Adj* R_2	*Beta*	*T*	*sig T*
English Mathematics					
English Math 1989	.17	.16	.41	4.7	.000
Grade Level	.39	.38	.48	6.4	.000
Spanish Math 1989	.43	.42	.29	2.7	.01
English Reading					
English Read 1989	.46	.45	.68	9.7	.000
Grade Level	.48	.48	.17	2.4	.018
Spanish Read 1989	.51	.50	.19	2.5	.01

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